What is claimed is:

[Claim 1] 1. A low noise amplifier (LNA) for filtering an input signal to generate an output signal, comprising:

a switched loading circuit comprising a plurality of loading units, each of the loading units determining a corresponding center frequency of the LNA, the switched loading circuit for selectively enabling at least one loading unit having the corresponding center frequency; and
at least one converter coupled to the switched loading circuit for converting the input signal into a loading current and passing the loading current through the enabled loading unit to generate the output signal.

[Claim 2] 2. The LNA of claim 1, wherein the loading units include a first loading unit and a second loading unit, and the switched load circuit further comprises:

a first switch coupled to the first loading unit and the converter, wherein if the first switch is switched on, the first loading unit is coupled to the at least one converter; and
a second switch coupled to the second loading unit and the converter, wherein if the second switch is switched on, the second loading unit is coupled to the at least one converter.

[Claim 3] 3. The LNA of claim 1, wherein each of the loading units comprises an inductor.

[Claim 4] 4. The LNA of claim 3, wherein each of the loading units further comprises a capacitor coupled to the inductor in parallel.

[Claim 5] 5. The LNA of claim 4, wherein each of the loading units further comprises a resistor coupled to the inductor in series.

[Claim 6] 6. The LNA of claim 1 further comprising:

a gain controller for controlling the at least one converter according to a desired gain.

[Claim 7] 7. The LNA of claim 6, wherein the at least one converter comprises a controlled loading unit for adjusting the input impedance to a predetermined value.

[Claim 8] 8. The LNA of claim 1 being applied to a wideband communication system.

[Claim 9] 9. A low noise amplifier (LNA) for filtering an input signal to generate an output signal, comprising:

a switched loading circuit comprising a plurality of loading units, each of the loading units determining a corresponding center frequency, the switched loading circuit for selectively enabling at least one loading unit;
a first converter coupled to the switched loading circuit for converting the input signal into a first loading current; and
a second converter coupled to the switched loading circuit for converting the input signal into a second loading current;
wherein the output signal is generated according to the first loading current or the second loading current or both.

[Claim 10] 10. The LNA of claim 9, wherein the controlled loading unit is enabling according to the operation situation of the first and the second converters.

[Claim 11] 11. The LNA of claim 9, further comprising:

a controlled loading unit for adjusting the input impedance of the LNA to a predetermined value.

[Claim 12] 12. The LNA of claim 9, further comprising:

a gain controller for driving the first and the second converters according to a desired gain.

[Claim 13] 13. A low noise amplifying method for filtering an input signal to generate an output signal, comprising:

providing a plurality of loading units, each of the loading units determining a corresponding center frequency;
selectively enabling at least one loading unit; and
converting the input signal into a loading current and passing the loading current through the enabled loading unit to generate the output signal.

[Claim 14] 14. The method of claim 13, wherein the loading units include a first loading unit and a second loading unit, and the step of selectively enabling comprises:

providing a first switch and a second switch;
switching on the first switch to enable the first loading unit; and
switching on the second switch to enable the second loading unit.

[Claim 15] 15. The method of claim 13, wherein each of the loading units comprises an inductor.

[Claim 16] 16. The method of claim 15, wherein each of the loading units further comprises a capacitor coupled to the inductor in parallel.

[Claim 17] 17. The method of claim 16, wherein each of the loading units further comprises a resistor coupled to the inductor in series.

[Claim 18] 18. The method of claim 13 further comprising:

converting the input signal into a second loading current and passing the second loading current through the enabled loading unit according to a desired gain to generate the output signal.

[Claim 19] 19. The method of claim 13 further comprising:

controlling a controlled loading unit to match the input impedance to a predetermined value.

[Claim 20] 20. The method of claim 9 being applied to a wideband communication system.